

ABSTRACT

Mechanisms for storing and searching a hierarchy of items are disclosed which may be particularly useful for implementing security policies and security associations, such as, but not limited to Internet Protocol security (IPsec). A hierarchy of items is stored in a search priority order. Multiple element definitions and groups of elements are identified. Representations of the element definitions and elements are stored in a prioritized searchable data structure in decreasing search priority such that representations of each particular element definition is stored after representations of a set of particular elements associated with the particular element definition and before representations of lower priority element definitions and their associated elements. The element definitions may include Internet Protocol security policies and the elements may include Internet Protocol security associations. The searchable data structure may include an associative memory or a plurality of associative memory entries.